



BELOORBAYIR biotech Ltd. (unit : bayir chemicals)

Regd. Office : # 564, 4th Cross, Kempegowda HBCS, Opp. Water Tank Park, Kathriguppe, Banashankari 3rd Stage, Bengaluru - 560 085

☎ +91-80-43489900 upto 99 ✉ info@bayirextracts.com 🌐 www.beloorbayir.com

CIN : U73100KA2005PLC035741 Licence No.: KTK/37/54/2019 dated: 01/06/2019

CERTIFICATE OF ANALYSIS

PRODUCT NAME: GLUCOSAMINE SULFATE SODIUM CHLORIDE USP		Page 1 of 2
Batch No.	: GLS-25019	Batch size : 1000.0Kg
Mfg.Date	: March -2025	Re-test Date : February -2029
A.R.Number	: BC/GLS/FP/25019	Date of Release : 01/04/2025

SL. No.	TEST PARAMETER	SPECIFICATION	RESULT
1	Description	White crystalline powder / White powder	White powder
2	Identification		
	a.IR Absorption	The IR spectrum of the test sample should be similar to that of Glucosamine hydrochloride working standard.	Complies
	b.Chloride and Sodium	Should respond for Chloride and Sodium	Complies
	c.ByHPLC	The retention time of the major peak in the HPLC chromatogram of the assay preparation of sample correspond to that of the Standard preparations obtained in the Assay.	Complies
	d.Sulfate	In the test for content of sulfate, after the addition of barium chloride TS a white precipitate is formed.	Complies
3	Specific rotation (35mg/ml solution in water)	Between +50.0° and + 55.0°	+ 52.2°
4	pH (20mg/ml solution in water)	Between 3.0 and 5.0	4.6
5	Loss on drying (105.0 °C for 2 hours, %w/w)	NMT 1.00	0.14
6	Residue on ignition (%w/w)	Between 22.5 and 26.0	24.2
7	Potassium	No precipitate is formed	Complies
8	Arsenic (µg per g)	NMT 3	<3

Prepared by : Divyashree H K	Checked by : Ramesh G	Approved by : Ashwini
Sign & Date : <i>[Signature]</i> 01/04/2025	Sign & Date : <i>[Signature]</i> 01/04/2025	Sign & Date : <i>[Signature]</i> 01/04/2025



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PRODUCT NAME: GLUCOSAMINE SULFATE SODIUM CHLORIDE USP		Page 2 of 2
Batch No.	: GLS-25019	Batch size : 1000.0Kg
Mfg.Date	: March -2025	Re-test Date : February -2029
A.R.Number	: BC/GLS/FP/25019	Date of Release : 01/04/2025

SL. No.	TESTPARAMETER	SPECIFICATION	RESULT
9	Content of Sulfate(%w/w)	Between 16.3 and 17.3	17.1
10	Assay by HPLC (%w/w, on dried basis)	Between 98.0 and 102.0	99.6
11	Solubility	Freely soluble in water	Complies
12	Residual solvents by GC (Methanol in ppm)	NMT 1000	<65
13	Chloride(%)	Between 12.0 and 13.0	12.2
14	Sodium(%w/w)	Between 7.5 and 8.5	7.8
15	Related substances by HPLC(%) a. Any unspecified impurity (For each impurity), w/w b. Total impurities w/w	NMT 0.05% NMT 0.2%	BDL BDL
16	Micro biological Analysis i. Total Microbial count ii. Yeast and Mold a. <i>E.coli</i> b. <i>Salmonella</i> c. <i>Staphylococcus aureus</i> d. <i>Pseudomonas aeruginosa</i>	NMT 1000 cfu/g NMT 100 cfu/g Should be Absent in 1g Should be Absent in 10g Should be Absent in 1g Should be Absent in 1g	50cfu/g Absent Absent Absent Absent Absent
17	Elemental Impurities	To comply with USP<232>, ICHQ3D requirements	Complies

Additional Test

18	Particle size	100% pass through 100 mesh	100% pass
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BDL – Below Disregard limit

Disregard limit – 0.03%

REMARKS : The material complies with USP and In-House specifications.

Storage : Store in tight, light – resistant containers

Prepared by : Divyashree H K	Checked by : Ramesh G	Approved by : Ashwini
Sign & Date : <i>[Signature]</i> 01/04/2025	Sign & Date : <i>[Signature]</i> 01/04/2025	Sign & Date : <i>[Signature]</i> 01/04/2025



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CERTIFICATE OF ANALYSIS

PRODUCT NAME: GLUCOSAMINE SULFATE SODIUM CHLORIDE USP		Page 1 of 2
Batch No.	: GLS-25020	Batch size : 1000.0Kg
Mfg.Date	: March -2025	Re-test Date : February -2029
A.R.Number	: BC/GLS/FP/25020	Date of Release : 01/04/2025

SL. No.	TEST PARAMETER	SPECIFICATION	RESULT
1	Description	White crystalline powder / White powder	White powder
2	Identification		
	a.IR Absorption	The IR spectrum of the test sample should be similar to that of Glucosamine hydrochloride working standard.	Complies
	b.Chloride and Sodium	Should respond for Chloride and Sodium	Complies
	c.By HPLC	The retention time of the major peak in the HPLC chromatogram of the assay preparation of sample correspond to that of the Standard preparations obtained in the Assay.	Complies
	d.Sulfate	In the test for content of sulfate, after the addition of barium chloride TS a white precipitate is formed.	Complies
3	Specific rotation (35mg/ml solution in water)	Between +50.0° and +55.0°	+ 53.6°
4	pH (20mg/ml solution in water)	Between 3.0 and 5.0	4.5
5	Loss on drying (105.0 °C for 2 hours, %w/w)	NMT 1.00	0.13
6	Residue on ignition (%w/w)	Between 22.5 and 26.0	24.8
7	Potassium	No precipitate is formed	Complies
8	Arsenic (µg per g)	NMT 3	<3

Prepared by : Divyashree H K	Checked by : Ramesh G	Approved by : Ashwini
Sign & Date : <i>[Signature]</i> 01/04/2025	Sign & Date : <i>[Signature]</i> 01/04/2025	Sign & Date : <i>[Signature]</i> 01/04/2025



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CERTIFICATE OF ANALYSIS

PRODUCT NAME: GLUCOSAMINE SULFATE SODIUM CHLORIDE USP Page 2 of 2

Batch No.	: GLS-25020	Batch size	: 1000.0Kg
Mfg.Date	: March -2025	Re-test Date	: February -2029
A.R.Number	: BC/GLS/FP/25020	Date of Release	: 01/04/2025

SL. No.	TESTPARAMETER	SPECIFICATION	RESULT
9	Content of Sulfate(%w/w)	Between 16.3 and 17.3	16.5
10	Assay by HPLC (%w/w, on dried basis)	Between 98.0 and 102.0	99.8
11	Solubility	Freely soluble in water	Complies
12	Residual solvents by GC (Methanol in ppm)	NMT 1000	<65
13	Chloride(%)	Between 12.0 and 13.0	12.6
14	Sodium(%w/w)	Between 7.5 and 8.5	8.0
15	Related substances by HPLC(%) a. Any unspecified impurity (For each impurity), w/w b. Total impurities w/w	NMT 0.05% NMT 0.2%	BDL BDL
16	Micro biological Analysis i. Total Microbial count ii. Yeast and Mold a. E.coli b. Salmonella c. Staphylococcus aureus d. Pseudomonas aeruginosa	NMT 1000 cfu/g NMT 100 cfu/g Should be Absent in 1g Should be Absent in 10g Should be Absent in 1g Should be Absent in 1g	40cfu/g Absent Absent Absent Absent Absent
17	Elemental Impurities	To comply with USP<232>, ICHQ3D requirements	Complies
Additional Test			
18	Particle size	100% pass through 100 mesh	100% pass

Shipment Quantity : 575.0 Kg

BDL – Below Disregard limit
Disregard limit – 0.03%

REMARKS : The material complies with USP and In-House specifications.

Storage : Store in tight, light – resistant containers

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